



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,140	10/14/2004	David Collingwood	121504	1974
25944	7590	12/11/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			GATES, ERIC ANDREW	
			ART UNIT	PAPER NUMBER
			3722	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/511,140	<b>Applicant(s)</b> COLLINGWOOD ET AL.
	<b>Examiner</b> Eric A. Gates	<b>Art Unit</b> 3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 4/10/2006, 10/14/2004, and 8/20/2003.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 23-51 is/are pending in the application.  
4a) Of the above claim(s) 25 is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 23, 24, and 26-51 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 14 October 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. \_\_\_\_.  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/14/04.  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

- a. Species I, as shown in Figure 2.
- b. Species II, as shown in Figure 3.
- c. Species III, as shown in Figure 4.
- d. Species IV, as shown in Figure 5.
- e. Species V, as shown in Figure 6.
- f. Species VI, as shown in Figure 7.
- g. Species VII, as shown in Figure 8.
- h. Species VIII, as shown in Figure 9.
- i. Species IX, as shown in Figures 10 and 11.

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Currently, no claims have been identified to be generic.

2. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: in accordance with the guidance set forth in MPEP section 1850, it has been determined *a posteriori*, i.e., after taking the prior art into consideration, that the feature common to all the claims, i.e., wherein a tool for use with a machining spindle has an electrical link in the form of at least one electrical contact, does not constitute a "special technical feature" since it does not make a "contribution" over the prior art in light of at least U.S. Patent 4,890,306 to Noda. Specifically note that Noda teaches a tool holder 30 provided with an electrical link formed by output head 35 and readout head 17 which are capable of contacting each other electrically (see column 3, lines 53-56).

3. During a telephone conversation with Ms. Lynn Schwenning on 9 November 2006 a provisional election was made with traverse to prosecute the invention of Species III, claims 23, 24, and 26-51. Affirmation of this election must be made by applicant in replying to this Office action. Claim 25 is withdrawn from further

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Objections***

5. Claim 40 is objected to because of the following informalities: the words "or each" should be deleted from the claim. Appropriate correction is required.
6. Claims 42, 43, 49, and 50 are objected to because of the following informalities: the language of the claims should be edited to correct the grammatical errors. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 38, 46 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. Claim 38 recites the limitation "the accessory" in line 1. There is insufficient antecedent basis for this limitation in the claim.
  - b. In claims 46 and 47, the use of the term "approximately" in both claims renders the claims indefinite because it cannot be determined what tolerance is necessary to meet the frequency requirements of the claims.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 23, 24, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Ottone et al. (U.S. Patent 5,407,416).
9. Regarding claim 23, Ottone et al. discloses a machine tool comprising a stationary part 10 and a spindle 26 rotatable relative to the stationary part, the spindle having a shank receiving area (not labeled, see figure 1) for releasably accepting the shank 28 of a cutter or other machine tool accessory 27, and comprising a first electrical link (link from control unit on stationary part 10 to clamp (not labeled) on spindle 26, see column 6, lines 31-35) between the stationary part 10 and the spindle 26, and a portion of a second electrical link 128 (link exists from sensor 128 to the control unit, see column 6, lines 4-16) at the shank receiving area in electrical connection with the first link (through the link with the control unit) for providing in use a disconnectable electrical link between the spindle and the shank (the link to the control unit may be disconnected), wherein the portion of the second link is in the form of at least one electrical contact 129.
10. Regarding claim 24, Ottone et al. discloses wherein the first link and the portion of the second link are arranged to transmit signals (see column 6, lines 4-16 and 31-35).
11. Regarding claim 27, Ottone et al. discloses wherein the portion of the second link at the shank receiving area includes any electrical link between the shank and the spindle (see column 6, lines 4-16).

Art Unit: 3722

12. Regarding claim 28, Ottone et al. discloses wherein the electrical link comprises a disconnectable physical contact between the spindle and the shank (the link to the control unit may be disconnected).

13. Claims 23, 24, 27, 28, 31, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated Zettl (U.S. Patent 4,761,101).

14. Regarding claim 23, Zettl discloses a machine tool comprising a stationary part (not labeled, see figure 1) and a spindle 24 rotatable relative to the stationary part, the spindle having a shank receiving area (not labeled, see figure 2) for releasably accepting the shank of a cutter or other machine tool accessory 10, and comprising a first electrical link (not shown but inherent, link from stationary part to primary coil 26 that provides power to the coil) between the stationary part and the spindle, and a portion of a second electrical link 26/28 at the shank receiving area in electrical connection with the first link (to provide power to the second link) for providing in use a disconnectable electrical link between the spindle and the shank, wherein the portion of the second link is in the form of at least one electrical contact.

15. Regarding claim 24, Zettl discloses wherein the first link and the portion of the second link are arranged to transmit power.

16. Regarding claim 27, Zettl discloses wherein the portion of the second link at the shank receiving area includes any electrical link between the shank and the spindle.

17. Regarding claim 28, Zettl discloses wherein the electrical link comprises a disconnectable physical contact between the spindle and the shank.

18. Regarding claim 31, Ottone et al. discloses the at least one electrical contact 129 is in the form of a "C" shaped conductive element (see figure 12) mounted to a non-conductive block (the contact 129 is mounted to the electronic control unit (which would inherently be formed of a non-conductive material) through optical fibers, see column 6, lines 11-14) at the shank receiving area.

19. Regarding claim 32, Ottone et al. discloses wherein the block is releasably held at the area (by the optical fibers).

20. Claims 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Noda (U.S. Patent 4,890,306).

21. Regarding claim 33, Noda discloses a machine tool shank 30 for releasably mounting a machine tool cutter 15 or other machine tool accessory to the spindle 11 of a machine tool comprising a portion of an electrical link 33 in the form of at least one electrical contact 33.

22. Regarding claim 34, Noda discloses wherein the at least one electrical contact 33 is in the form of a conductive element 335a/b and a resilient support 331 (as the claim does not require any level of resiliency, housing 331 meets this limitation, as housing 331 must display some degree of resiliency) supporting the conductive element 335a/b.

23. Regarding claim 35, Noda discloses wherein the shank 30 comprises an end (right end in figure 2) closest to a location for attachment of the machine tool cutter 15 or other machine tool accessory (this end is used for attachment of the machine tool cutter 15 to the spindle 11) and an end distal from the location (left end in figure 2),

wherein the said at least one contact 33 is closer to the distal end than to the end for the said attachment (see figure 2).

24. Regarding claim 36, Noda discloses wherein the said at least one contact 33 is in the third of the shank closest to the distal end of the shank (see figure 2).

25. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Noda (U.S. Patent 4,890,306).

26. Regarding claim 37, Noda discloses a machine tool accessory 30 having a shank for releasably mounting the accessory to the spindle 11 of a machine tool comprising a portion of an electrical link 33 in the form of at least one electrical contact 335a/b, the accessory being suppleable with power, and/or having a signal path, via the at least one electrical contact.

27. Claim 38 is rejected under 35 U.S.C. 102(b) as being anticipated by Noda (U.S. Patent 4,890,306).

28. Regarding claim 38, Noda discloses a measurement probe 33 having a shank 31 for releasably mounting the accessory 33 to the spindle 11 of a machine tool comprising a portion of an electrical link 33 in the form of at least one electrical contact 335a/b, the accessory being suppleable with power, and/or having a signal path, via the at least one electrical contact.

29. Claims 39-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Zettl (U.S. Patent 4,761,101).

30. Regarding claim 39, Zettl discloses a machine tool comprising a stationary part (not labeled, see figure 1), a spindle 24 rotatable relative to the stationary part having a shank receiving area (not labeled, see figure 2), a shank 10 releasably acceptable to the shank receiving area, and a machine tool accessory (drill bit, not labeled, see figure 1) attached to the shank, and comprising a first electrical link (not shown but inherent, link from stationary part to primary coil 26 that provides power to the coil) between the stationary part and the spindle 24 and a second electrical link 26/28 at the shank receiving area being in electrical communication with the first link (to provide power to the second link) for providing in use a disconnectable electrical link between the spindle and the shank for providing power or a signal for the accessory, wherein the second link is formed as two portions 26/28, one portion 26 being mounted to the spindle 24 the other portion 28 being mounted to the shank 10, wherein each portion has at least one complementary contact for electrical communication between the two portions.

31. Regarding claim 40, Zettl discloses wherein either one or both of the complementary contacts 26/28 is resiliently mounted.

32. Regarding claim 41, Zettl discloses wherein one of the complementary contacts is non-protruding (both are non-protruding).

33. Regarding claim 42, Zettl discloses wherein the shank receiving area includes any electrical link 26/28 between the shank and the spindle.

34. Regarding claim 43, Zettl discloses wherein the portion of the second link the electrical link comprises a disconnectable physical contact between the spindle and the shank.

35. Claims 48-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Zettl (U.S. Patent 4,761,101).

36. Regarding claim 48, Zettl discloses a machine comprising a stationary part (not labeled, see figure 1) and a rotatable part 24 continuously rotatable relative to the stationary part, the rotatable part 24 having a coupling receiving area (not labeled, see figure 2) for releasably accepting the coupling of a tool or other accessory 10, and comprising a first electrical link (not shown but inherent, link from stationary part to primary coil 26 that provides power to the coil) between the stationary and rotatable parts and a portion of a second electrical link 26/28 at the shank receiving area being in electrical connection with the first link for providing in use a disconnectable electrical link between the rotatable part and the coupling of the tool or other machine accessory, wherein the portion of the second link is in the form of at least one electrical contact.

37. Regarding claim 49, Zettl discloses wherein the at least one electrical contact includes any electrical link between the shank and the spindle.

38. Regarding claim 50, Zettl discloses wherein the electrical link comprises a disconnectable physical contact between the spindle and the shank.

39. Claim 51 is rejected under 35 U.S.C. 102(b) as being anticipated by Zettl (U.S. Patent 4,761,101).

40. Regarding claim 51, Zettl discloses a machine tool comprising a stationary part (not labeled, see figure 1) and a spindle 24 rotatable relative to the stationary part, the spindle 24 having a shank receiving area (not labeled, see figure 2) for releasably accepting the shank of a cutter or other machine tool accessory 10, and comprising a first electrical link (not shown but inherent, link from stationary part to primary coil 26 that provides power to the coil) between the stationary part and the spindle, and a portion of a second electrical link 26/28 for providing in use a disconnectable electrical link between the spindle and the shank, wherein the portion of the second link is in the form of any electrical link between the shank and the spindle.

***Claim Rejections - 35 USC § 103***

41. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

42. Claims 26, 29, 30, and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zettl.

43. Regarding claim 26, Zettl discloses the invention substantially as claimed, except Zettl does not disclose distinctly wherein the first link is an inductive link having complementary inductors which in use of the machine have relative displacement, one of the inductors being mounted to the spindle and the other of the inductors being mounted to the stationary part. However, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to have used an inductive link for the first link for the purpose of standardization because it would only require a duplication of the second link, and it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

44. Regarding claims 29, 30, 44, and 45, Zettl discloses wherein the receiving area is in the form of a cavity having an opening and a rear area furthest from the opening. Zettl does not disclose wherein the portion of the second link is disposed closer to the rear area than to the opening or wherein the portion of the second link is disposed at the rear third of the cavity. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have moved the link closer to the rear area for the purpose of design choice, since it has been held that rearranging parts of an invention involves only routine skill in the art.

45. Regarding claims 46 and 47, Zettl discloses the invention substantially as claimed, except Zettl does not disclose wherein alternating current passes through the first and second links at a frequency greater than approximately 20KHz or wherein the frequency is approximately 100 KHz. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have chosen any frequency of current desired for the purpose of operating at the optimum frequency, because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

***Conclusion***

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric A. Gates whose telephone number is 571-272-5498. The examiner can normally be reached on Monday-Thursday 7:45-6:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on 571-272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
EAG  
6 December 2006

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER